ABSTRACT OF THE DISCLOSURE

In a quadrature amplitude (QAM) demodulator, an auxiliary symbol may be utilized in place of the decision symbol to adjust the decision-feedback loops within the demodulator. For the formation and definition of the auxiliary symbol, the radius and angle information of the received signal or of the preliminary symbol may be used. Through use of the auxiliary symbol instead of the decision symbol, any error in the angle information due to the unknown frequency and phase deviation of the local oscillator may be ignored. An auxiliary symbol generator may be provided which, instead of assigning to the received signal an element from the predetermined symbol alphabet, generates an auxiliary symbol that lies on the most probable one of the nominal radii. Nominal radii may mean those radii on which in QAM the predetermined symbols of the alphabet lie in the plane determined by the quadrature signal pair. For the angle component of the auxiliary symbol, the angle information of the sampled digital signal may be used. In polar coordinates, the auxiliary symbol may thus correspond to the vector intersection point of the sampled digital signal with the most probable nominal radius.